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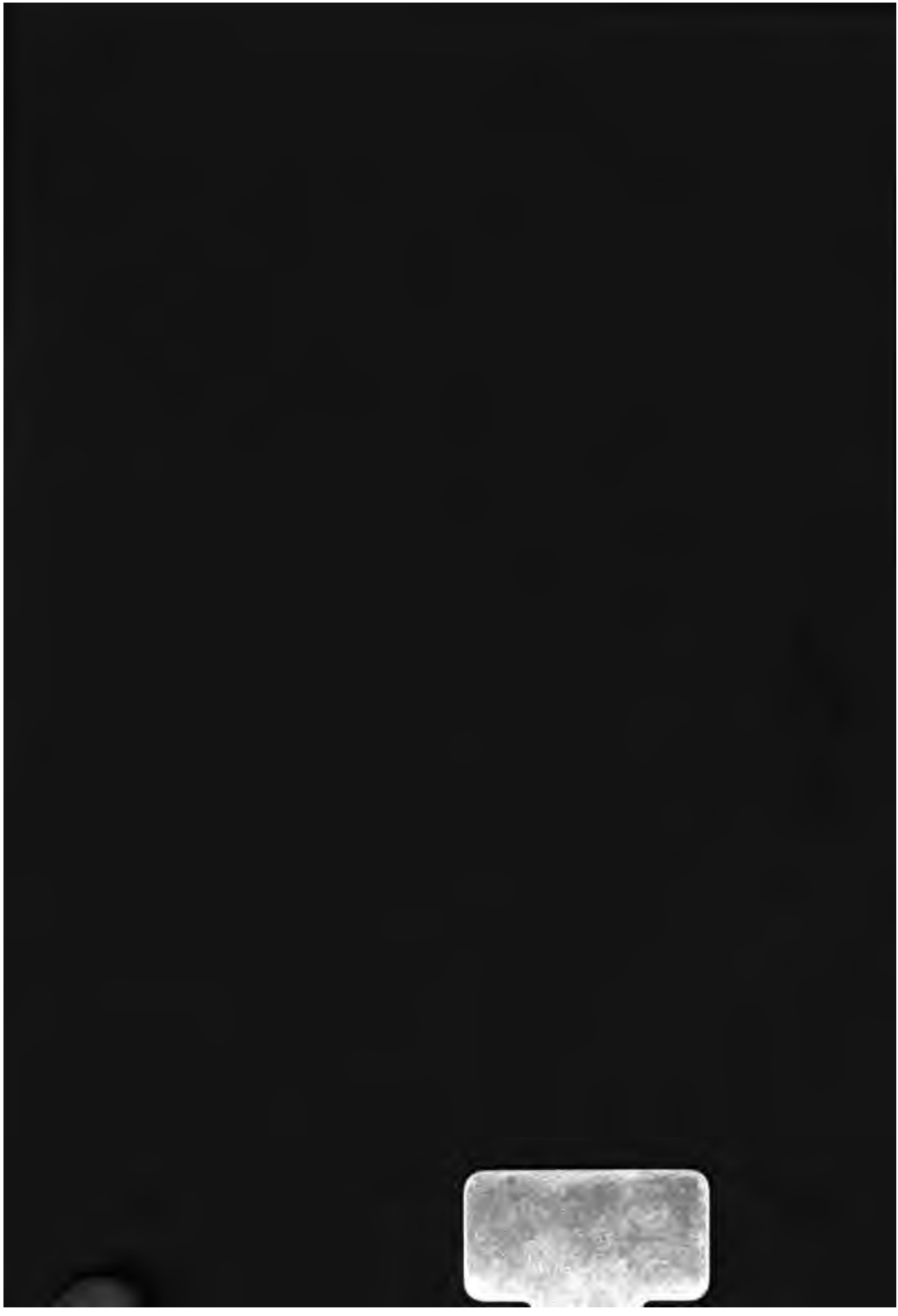
MEDICAL NOTES AND ESSAYS

INFLUENZA.

SIR P. EADE



MEDICAL
NOTES AND ESSAYS.

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Fasciculus II.

BY

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Fasciculus II.

INFLUENZA IN EAST ANGLIA,

1847, 1878, 1890, 1891.

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INFLUENZA IN EAST ANGLIA,

1847 to 1891.*

INTRODUCTION.

THE great epidemic of Influenza, which during the past two years has passed over this country like a great wave, and has affected to a greater or less extent nearly every portion of England, has been proportionately experienced in this district of East Anglia.

As appears to have been usually the case, the disease travelled to us from the east, and, to quote Dr. Graves, it soon "like a cloud, overshadowed the whole country."

Writing in the late autumn of 1891, it is impossible to say whether the disease has disappeared entirely from this district, or whether the epidemic has simply "died down," as it did for several months in the autumn of last year and

* The contents of this little book deal almost exclusively with Influenza as observed in this district. The method of arrangement is mainly that adopted in the first Fasciculus of my "Notes and Essays" on "Diphtheria in Norfolk;" the present publication constituting Fasciculus II. of these Notes.

the spring of the present year, only to revive again, and again to rage with great severity during the second quarter of this year.* Probably at no time during this interval was Influenza really absent, but it certainly did not then exist as an epidemic. And although during this period of quiescence numerous ailments were met with, which chiefly affected the nerves and nerve centres, and which were often essentially sequelæ of the primary disorder, yet clearly a distinct interval existed, during which Influenza was practically absent.

This great epidemic invasion of Influenza began in this district in the two latter months of 1889, with a few isolated or scattered cases. It became severe and widely extended in January and February of 1890; and it continued with varying severity until May or June. A large number of the patients suffered afterwards from prolonged debility, and from various neurotic or neuralgic affections, many of which commenced after an interval of several weeks from the original seizure, and often when the thought of the illness had almost passed away. And so marked was this, that it was often difficult medically to account for the ailment complained of. And its nature was often only to be understood through the experience derived from the investigation of many similar cases.

From about July, 1890, to the end of that year, the Influenza was only evidenced by a few scattered cases; nor did it recrudesce in 1891 as a severe and epidemic affection until a much later period than in 1890. Indeed,

* Quite recently, local outbreaks of Influenza have been reported from several districts of Scotland and England.

it did not develop itself on a large scale until March or April, when it again affected a large proportion of the population. Its symptoms were essentially those of the preceding years, although many and marked variations of the more urgent ones were noticeable, and many of which are noted in my paper on "Influenza in 1891."

Upon the whole, the disease has been less severe this year than last. The acute pleurisies and empyemas, the severe primary neurotic or neuritic pains and other nerve disturbances, have been less prominent, and the secondary nervous sequelæ somewhat less marked, though yet very common.

The general symptoms have been described by many observers. Though varying to a certain extent, they have been essentially alike in this and former epidemics; their definite characters, as noted from 1510 to 1890, being well and fully displayed in a collected form in that great storehouse of Influenza facts, Dr. Thompson's "Annals of Influenza." They contrast sharply with those of the bad "head cold" which is so common in our autumns and winters, and which is largely prevalent in this present month of November. In this latter, there is at first some soreness of the throat, with swelling and relaxation of the uvula; then in one or two days follows sneezing, coryza, and mucous secretion from the nostrils (head cold), with a general sense of illness or misery; and then, after about two days more, the disease appears to extend into the bronchial tubes, when there is wheezing, some cough, and mucous expectoration, with a general sense of fulness and stuffiness of the air tubes, added to that of the nose and frontal sinuses. In these cases there is usually no rise of

temperature; and the characteristic pains of the head and back seen in true Influenza are absent. Is there any essential connection between such a mild epidemic of "bad colds" and that of the more serious disease now happily latent?

But accurate and general as have been the observations, and numerous and practical as have been the writings of various authors upon this disease, yet all that we are even now justified in saying that we know positively about it, is that it is epidemic and spreading, which practically means that it is multipliable and communicable, and therefore due to a living germ cause; and that this cause, entering the system, exerts its morbid influence specially upon the nerve centres and nerves, and secondarily affects and produces disease in various other portions of the living tissues and organs; also that the disease not only runs a primary acute course, but is apt to be prolonged either as continuing debility, or in the form of more distinct and definite sequelæ or nervous disorders, to a very considerable period, of weeks, or even months.

Bacteriology.—Notwithstanding the laborious and skilled investigations of many observers, both in England and abroad; and notwithstanding the discovery of various micro-organisms in the secretions or fluids of influenzal patients, yet it would appear that the exact and certain microbal cause of this disease has not yet been positively and satisfactorily demonstrated. Professor Weichselbaum has expressed the opinion that the secondary pneumonia which is so common, may be due to the invasion of the

well-known essential Diplococcus of this inflammation, which has found favourable conditions for development in such diseased bodies.* And Ribbert thinks that the Streptococcus plays a very important part in the etiology of Influenza, if not its specific germ.† But whether this be so or no, the life history of the bacterium is by no means satisfactorily shown, nor are all the facts connected with the spread of the disease clearly elucidated.

We know that typhoid and other infective bacilli can be artificially cultivated and grown upon various external media, and so be shown to be capable of having a fructifying existence outside the human body. May it not be that the Influenza microbe may also have a double existence—one in the human subject, and the other in or upon other and external substances; in the latter case, throwing off its volatile reproductive spores into the atmosphere, from whence the disease may be inhaled or contracted, exactly as when it is taken from a sick person's breath. Personal contagion would seem to be well proven by the examples given, but such a double source of infection would seem also to explain many of the yet unexplained facts as to its mode of spread and conveyance, and would harmonize with the views so long held as to its aerial existence. The extremely rapid spread of an Influenza epidemic through a district or country almost implies an intense and virulent *contagium*, and yet the history of the disease in the various public institutions which I give herewith, shows that no such intense contagiousness neces-

* See "Annals of Influenza," by Dr. Symes Thompson, 1891. Page 413.

† Dr. Parsons' Report on Influenza, 1891.

sarily exists, even for those in close association; whilst the fact that stands out most prominently in the records is the comparatively small proportion of the inmates attacked, and that even those brought into close contact with each other, or sleeping in contiguous beds, by no means *necessarily* became infected by their sick neighbours.

NOTES ON INFLUENZA.

HAVING carefully watched the course and progress of the Influenza in this district during this epidemic of 1889—91, and having recorded some of its most salient features in the public journals when the observations were still fresh and recent, I have thought it might be of interest to reprint these papers, together with such additional notes concerning the disease as I have subsequently made. If for nothing else, they may at least prove useful for reference hereafter.

The periodical or occasional recurrence of epidemics of Influenza, their early fatality, their wide-spread diffusion, the frequent seriousness of the illness caused thereby, even when not mortal, and our continuing ignorance either to its precise cause or its prevention, or its cure, are sufficient to invest the disease with a deep interest, and to lead us to concentrate our thoughts upon both its direct and indirect phenomena and manifestations. The recent observations of Dr. Parsons tend strongly to show that its mode of propagation is at least frequently by contagion directly from person to person; also that its period of incubation does not exceed two or three days,—this latter fact being strongly confirmed by a notable case mentioned as occurring in my practice in the early part of this year, as well as by other observations given herewith. An observation of my own regarding the special secondary or tertiary incidence of the Influenza poison upon the sensory nervous

system (as contrasted with the more motor secondary paralytic influences of the diphtheric poison) is endorsed by Dr. Symes Thompson in a recent Gresham lecture on the subject of "Influenza."

I perfectly well remember the great Influenza epidemic of 1847-8, as I was at that time assisting in the surgery of my father, then a practitioner in this East Anglian district; and I have a lively remembrance of the widespread prevalence of severe illness, and of the excessive amount of work entailed thereby upon him, as well as the very large amount of dispensing of medicines which fell to my lot in consequence of this. A large portion of the population in his district was then more or less affected by the prevailing disease, and I also well remember how largely severe nasal and frontal catarrh, with headache, formed a main symptom of the cases; how urgent was often the sensation of severe illness produced; and how much more was "bronchitis" and free bronchial secretion a constant phenomenon of the attack (as also stated by Sir Thomas Watson of the epidemic of 1837) than has been observed in the epidemics of either 1878 or 1890-1. How severe was this 1847 epidemic may be noted by the fact that the deaths attributed to Influenza in 1847 were 4,881, and in 1848,—7,963,—numbers enormously in excess of those of any other years from 1838 to 1889. Indeed, in this latter year, just preceding this recent outbreak, such deaths were at their mininum, and were only 55. As in 1847, so in 1890, the first cases appeared in the month of November.

The Symptoms observed* in this district in 1890-1 have been essentially the same as those which are recorded as having marked the disease in other parts of England as well as abroad, and which are briefly described in the following reprinted papers.

The typical ones have been, generally, a sudden seizure, occasionally with chill or slight rigor, or quick feeling of severe illness and prostration, pains of the head and of the back of the eyes, pains of the back and limbs, general bruised feelings, and fever. This latter has varied greatly, sometimes it has been very slight, but usually the thermometer has ranged from 100° Fahrenheit, to 104° or 105°; and where there has been no complication, this has generally subsided at the end of either one or two or of four days. In a few cases, great and faint perspiration has been a marked symptom. The pulse has usually been small and quickened, but not always.

There has often also been in some cases, redness or irritability of the mucous membrane of the eyes, nose, and throat; and, doubtless, the same condition of the bronchial mucous membrane, as evidenced by the sibilant and mucous rales so constantly present in the lungs, though in varying degree, almost from the first. The cough has frequently been almost dry, often almost asthmatic in character; and the expectoration has usually been scanty, but has varied

* In 1891, in some localities the children seem at first to have been more largely attacked.

in every degree, from a few small viscid pieces of mucus to a copious, almost bronchorhœal, secretion. True catarrh has generally been conspicuous by its absence.* Cardiac asthenia has occasionally been a marked symptom.

In a certain class of cases the influence of the poison appears to have been specially exerted upon the gastro-intestinal mucous membrane, and in these vomiting, diarrhœa, and occasionally severe abdominal pain, have been marked symptoms.†

Pains often very severe in the pleural, intercostal, and diaphragmatic regions, were very common in the earlier periods of 1890, and appeared to be of the neuralgic or neuritic class.

The urine was not unfrequently albuminous, and now and then, though rarely, a little blood appeared in it for a short time.

Herpes Labialis was recorded by some observers, but I have not personally seen it.

In uncomplicated cases the febrile symptoms have usually subsided at the end of two or three or four days, but a large number have occurred in which the illness was prolonged by the supervention or co-occurrence of *complications* or *secondary* morbid phenomena.

The principal of these were congestive pneumonia, single or double; pleurisy with effusion, occasionally becoming a purulent empyema; otitis; eustachian deafness;

* In this respect forming a marked contrast to so large a proportion of the cases in 1847.

† Dr. Simon has reported some cases in which extreme though non-fatal collapse followed such abdominal pain.—(*British Medical Journal, June* 13*th*, 1891.)

glandular swellings; enlargement of the liver or spleen; phlebitis, of the femoral vein; delirium; somnolence; and an eruption on the skin, erythematous, scarlatinoid, or papular,—occasionally with dark or livid apices to the papules.*

Dr. Norman Kerr and others have suggested the subdivision of these cases according as the respiratory, the gastro-intestinal, or the nervous systems, or the joints, were specially affected; but I have scarcely found that such a true separation of the cases into distinct types was practically possible.

Sequelæ. Following the subsidence of the more active symptoms of the Influenza, a class of cases has been largely met with to which the term "*sequelæ*" has been most properly applied. Such *tertiary* troubles have been frequently alluded to by many writers on previous epidemics, but these notices have usually been limited almost to the mere mention of the fact, and that these later disorders have usually been of the nervine class. I think I am right in saying that a full description of them is nowhere given in any published volume, although they have been more carefully observed and noted by writers in the medical journals and elsewhere, during the present epidemic, than hitherto.

These sequelæ have usually occurred some few weeks

* Bloody dysentery, chorea, simple or purulent meningitis, epistaxis, and many other symptoms, have been recorded by others, and in other localities.

(often about eight or ten) after recovery or apparent recovery from the primary illness, and they have varied from a mere return of general debility or asthenia, which has then often been tedious and prolonged,—to a condition in which definite nervous affections, more especially of the sensory nervous system, have been present and have constituted distinct ailments or illnesses. They all confirm the view now generally entertained that the poisonous and irritant effect of the Influenza poison is mainly exerted upon the nervous system at its centres and (in the form of quasi-neuritic affections) upon the peripheral systems of nerves.

Examples of some more severe cases of this class are given in the Appendix, but besides these a multitude of indefinite and tedious nerve ailments have been met with, which it has been only possible to diagnose accurately, by a knowledge of the prevalent epidemic condition of the district, and by a reference to other similar cases.

It has appeared to me, that whilst prolonged debility and other of the neurasthenic class of these affections have been very common this year, yet that the more active and severe forms of tertiary nerve disturbance were much more marked in 1890.

In both years, the temperature, when observed, has always been found to be normal, or subnormal; and the reflexes have often been diminished.

These sequelæ often partake largely of the character of the initial symptoms, at least so far as their influence upon the nervous system is concerned. The principal of those which have been noted by me and others in this district may be roughly classified, as thus:—

(*a*). Asthenia and abiding debility; general sense of muscular weakness and languor; protracted loss of energy and power of exertion; loss of sexual power.

(*b*). Spasmodic or irritative affections of the pulmonary or circulating organs, such as persistent bronchitis, *quasi*-asthmatic affections, and cardiac distresses; but these latter are more rare.

(*c*). Dullness and sleepiness by day, varying from the drowsiness so often seen in anæmic and chlorotic conditions, to that of true "Nona" or "sleeping sickness."

(*d*). Mental disorders, varying from slight derangement or weakness of brain power, up to maniacal excitement, or temporary true mania or melancholia. (True insanity appears also to have been unusually frequent in these years.)*

(*e*). Affections of the sensory nerves; neuritic pains, or true local neuralgias; various neuroses, especially of the abdomen or limbs, tinglings, sensations of "pins and needles;" or, on the other hand, of numbness, and more or less local coldness or anæsthesia, as in spots of skin, of the nose, elbow, etc.

(*f*). Purulent catarrhal affections of mucous membranes, especially of those of the ear (otorrhœa); of the nose (ozœna), or of the naso-pharynx (post nasal catarrh).

(*g*). The increased frequency of cases of Phthisis has been very marked, and has been apparently a result of the Influenzal poison.

* Dr. Railton has reported in *The Lancet* for October, 1891, a remarkable case of post-influenzal hysteria in a child, aged only six years.

(*h*). Various affections of the lymphatic glands; inflammation of the parotid gland, and of the epididymis; also enlargement of the thyroid body.

(*j*). Desquamations of the skin; also shedding of the cuticular appendages, or of the hair of the scalp (acute alopecia).

The Treatment of the Influenza attack found by all to be most appropriate has been essentially tonic, either from the first, or after a short use of antipyrin, or of salicine or salicylate of soda. In mild cases, little has been needed besides an effervescing draught with hydrocyanic acid, or some aromatic spirit of ammonia, conjoined with warmth and rest in bed. But even in somewhat more severe cases, so much relief has often ensued from the sudden subsidence of active symptoms at the end of 24, 48, or 72 hours, that little further treatment has been required. But in feeble or elderly patients, or where congestive or inflammatory complications have supervened, then measures calculated to support the system against the nervous shock thereby caused, have seemed necessary, and indeed have proved most successful in practice.

Suitable remedies in these cases have been the combinations of ammonia, with quinine or tincture of bark, or strychnine; and in other cases iron with the quinine. In cases of very old and feeble hearts, a combination of the compound infusion of orange peel, with digitalis, and compound spirit of sulphuric ether, is a most valuable help.

The value of alcoholic stimulants has varied greatly. In some cases, sparkling wines, especially champagne, have been both grateful and helpful. In other cases, brandy in large doses has aided very much in removing the extreme sense of prostration, the heart feebleness, and the relaxed sweatings. But in other cases, not only have such stimulants not been required, but they have been positively distasteful and objected to by the patient, and in such cases they have been properly omitted altogether. In feeble persons during convalescence, matured port wine or a little spirit and water, has been often found to be not only comforting, but has appeared to aid the taking and digesting of food.

It would seem that ordinary Influenza by itself has scarcely been so fatal as on some former occasions. But where pneumonia or other severe pulmonary complications were present, then a fatal result has been not uncommon. But even in very acute pulmonary congestions or inflammations, where there has been a fairly sound body, the rapidity with which these and other acute conditions have sometimes passed away, and convalescence been established, has been very remarkable. Still on the other hand, the mortality returns for Influenza periods show how large is often the increase of deaths referred purely to chest inflammations, but which there is little doubt are in a large proportion of the cases due to the specific influence then prevailing, and doubtless the same will be found to be the case now.*

* In consequence of the Registrar General's returns not being yet available, I am unable to give the figures for 1889-91 bearing upon this point.

Of the prophylactive treatment of Influenza I have no experience, as I have not had to deal with cases in their earliest stages. The washing of the conjunctivæ with boracic acid water, as recommended by Dr. Besley Thorne, may possibly be helpful, but I have by no means generally seen marked irritation of the conjunctival mucous membrane; whilst, theoretically, one would doubt the sufficient potency of such a mild antiseptic to destroy, or to prevent the development of, so rapidly growing a germ.*

The treatment of the sequelæ has been on the whole satisfactory. The various tonics, markedly iron, quinine, and strychnine, have usually been very serviceable, especially when combined with that excellent nervine sedative, bromide of potassium; and in some cases, the phosphoric or other mineral acids have given support and comfort. It has appeared essential in some of the more severe neuritic cases, especially when abdominal "misery," and its frequent attendant mental depression and anxiety, have been marked features, to give nocturnal anodynes—chloral, sulphonal, or Dover's powder. And I have seen much comfort afforded by the gentle use of outside anodyne embrocations,—especially such as is formed by the combination of equal parts of the liniments of belladonna, chloroform, and opium. In very protracted cases, galvanism to the lower extremities has been reported to have been occasionally of service.

* Dr. Handfield Jones has expressed the opinion ("On Functional Nervous Disorders," p. 121) that "the catarrhal symptoms are for the most part such as indicate vaso-motor nerve paralysis, and atony of the capillary walls, rather than actual tissue irritation."

Moral remedies, such as change from home, have been also of advantage in promoting recovery, especially where there has been more than usual disturbance of the mental faculties.

EPIDEMIC OF INFLUENZA IN 1878.

THE following note which I published in 1878 is worthy of a short notice.* At that time no such severe and general disease existed as has recently overspread a large portion of Europe, as well as other parts of the world; and, moreover, some of the more familiar phenomena of Influenza were undoubtedly absent. But, nevertheless, an undoubted minor epidemic did at that time exist in this district (as doubtless in many other portions of England), quite sufficient to attract attention, and which presented many of the features generally recognised as those of Influenza, and which are there described by me; the chief difference appearing to consist in the large amount of ordinary catarrhal and bronchitic symptoms, as compared with the features of the disease as seen in 1890–1. These have been strikingly less marked in both of these years than they are described to have been in this and some others of the earlier epidemics.

Still, on the whole, the type of the disease was the same. The characteristic nervous prostration was present,

* It is quoted by Dr. Parsons in his most able and comprehensive Report (1891) on the Influenza Epidemic of 1889-90 to the Local Government Board.

and it was clear that a real or modified Influenza epidemic was present in the district.

The chief importance of such a minor epidemic thus recognised and described at the time, would appear to be its bearing upon the much discussed question whether Influenza is always a new importation at each outbreak; whether it entirely dies out and disappears after each great epidemic; or whether its seeds are always amongst us, showing themselves in a greater or less degree on favourable occasions, and ready to burst out into a wide-spread disorder whenever either the conditions of the atmosphere or of the animal system, or the *renaissant* vitality of the seed-germs, should furnish the appropriate conditions for the revival and renewal of the more virulent disease.

There is little doubt that an atmospheric influence not very different from that prevailing in this year, 1878, has occasionally been present in the spring of other years, when epidemic pneumonia and other respiratory diseases have extensively prevailed in certain parishes and localities;—as, for example, in one case in which these conditions were existent some twelve or fourteen years ago in a village some ten miles from Norwich. I was called at that time to a household in this parish in which four adults in one house were at one time suffering from acute pneumonia, all with very high temperature, but all of whom recovered. It is clear, nevertheless, that however nearly related "epidemic pneumonia" and "influenza" may be, yet that they are not identical, seeing that some of the specialized symptoms distinctive of the latter are always wanting in the former.

I have further noted that the prevailing winds in 1878 were westerly, instead of easterly, as is usual in this district in the spring months of the year. It has been noticed that with a severe visitation of Influenza, the prevailing winds have generally been easterly or north-easterly, and that the disease has advanced from China, Russia, or other eastern countries in a westerly direction. It is a fair suggestion, whether it is possible that the contrary direction of the current of the atmosphere at this season of 1878 had much to do with the mildness of the disease in this year, and with the variations of the phenomena which it presented. It should be further mentioned that this epidemic was not only comparatively mild, but was of very limited duration; and, moreover, does not appear to have been followed by many or very special nervous sequelæ.

INFLUENZA IN EAST ANGLIA, 1878.

(*Reprinted from* THE LANCET *of March 16th*, 1878.)

"DURING the past four or five weeks a wave of epidemic disease has been passing over this district. It has affected more or less a considerable proportion of the community, whether old or young, and has produced symptoms and effects which, though varying greatly in intensity, have been distinctly and manifestly of the same type throughout. This epidemic disorder has been regarded as 'Influenza,' and in many of its features resembles the former epidemics to which this name has been applied; but it has differed from these in some particulars, and especially in the fact of the frontal oppression and the true catarrhal symptoms being generally less marked and pronounced. In many cases, it is true, 'a bad cold' has been the most noticeable feature of the disorder; but, in a large proportion, cough, either dry and irritable, or moister and with some expectoration—rarely abundant—has been a more prominent symptom. In all the cases languor and depression have been much complained of; and there has frequently been present a peculiar damp, sodden, and per-

spiring condition of the skin, which has attracted the patient's attention, and which has either recurred several times in the day, or has been more or less present both by day and night for several consecutive days.

"The invasion of the disease has usually been sudden, and marked by more or less of chilliness or shivering, soon followed by the catarrhal symptoms or the cough previously alluded to. In some cases one member of a family has had 'a bad cold,' whilst the others, less severely affected, have only felt weak and perspiring, or have been merely teazed with a troublesome and irritating cough, which has been slow to pass away, and whose persistence has been apparently causeless and inexplicable. The apparent duration of these 'colds' has usually been about a fortnight, and they have in some cases disappeared rather suddenly, convalescence, when once begun, having gone on unexpectedly rapidly.

"In the majority of cases the disease has passed harmlessly away, but not in all; for many children and elderly adults have, during the presence of the epidemic, succumbed to the bronchitis, the congestions of the lungs, and the pneumonias which have been largely prevalent, and which have doubtless been due to the same morbid atmospheric influence. The severest types of the disease were seen at its commencement a few weeks ago. It has lately—though more extensively diffused and often affecting whole households—become more mild, and would appear now to be gradually passing away.

"It should be recorded that the season has been, as a whole, both damp and mild, and that the prevailing winds have been from the west. During this same period

whooping-cough and false measles have been present in the district.

"It is unnecessary to dwell minutely upon the other symptoms, since these are in broad outline like to those observed in other similar epidemics, and so ably described by Sir T. Watson; but I have thought it well to record the fact of the present existence of the disorder, and to note the slight peculiarities which have marked its passage through this district, as they have come under my observation. It has doubtless prevailed in a similar way in other districts of the country.

"The treatment which has been found most appropriate has been, speaking generally, a supporting treatment. Nourishing broths and other light but nutritious foods have been necessary, and champagne or other fermented liquors have frequently been found useful. Sinapisms and hot applications to the chest, &c., have usually given some relief; and small doses of opium or morphia have often greatly comforted, and allayed the irritating cough. For the general symptoms, ammonia, with nitric or chloric ether, or compound tincture of bark, or with expectorants, appeared well suited, and has usually afforded distinct relief to the feeling of general *malaise.*"

INFLUENZA IN EAST ANGLIA

IN 1890.

(*Reprinted from* THE LANCET *of Feb. 1st*, 1890.)

"THE epidemic of Influenza has now fully invaded and spread through this district, and a large section of the population has been suffering from illness of greater or less severity. In consequence, we as practitioners have had to deal with a large number of cases of acute disease, respiratory or otherwise, attributable to its influence. Its early presence in this county has already been noted by Dr. Manby, but the results of further and localised observation appear to be worthy of a short record in your columns. From personal observation of various epidemics of Influenza in Norfolk, from that of 1847 downwards, I am able to say that the symptoms of the disease now present amongst us, although differing in some special and important respects from those of previous invasions, yet have a strong family likeness to them. On some former occasions the naso-frontal and catarrhal symptoms have usually been more pronounced than now, and it would almost seem as if in each succeeding epidemic these features of the disease have been less marked and essential.

Still the same type remains, and what I wrote in THE LANCET of 1878* of the then prevailing disease would fairly well describe that now existing in this neighbourhood. In one respect this epidemic would seem to differ from preceding ones in that it appears to have travelled and spread irrespective of winds and uninfluenced by temperature or the mild weather; whilst certainly on some former occasions it has broken out so suddenly upon the giving way of a frost or the melting of snow as to point to the probability of a close connexion between the two circumstances.

"As to the present disease, single or isolated cases of it have frequently occurred, but more often the 'whole house' has been more or less affected, and its various members have all suffered, though in very different degrees. Some of them have had 'bad colds,' others chills and temporary feverishness, others have had scarcely any cold or cough, but much general pain and temporary fever; whilst occasionally one or more members of the household have been seriously ill, with oppressed breathing and pulmonary or pleuritic inflammations. In one family recently visited there were three suffering and dangerously affected, whilst the rest of the numerous party were scarcely importantly ill.

"It is, I believe, generally accepted that the cause of this disease is an atmospheric miasmatic germ; and whether the reported discovery at Vienna of the specific germ itself be confirmed or not, certain it is that in all essential particulars the invasion of the disease occurs in

* Vol. I., page 378.

the same way as does that of many of our well-known specific fevers, in which the presence of a microbal or bacillary cause is undisputed. For example, the initial rigor in severe cases, or the lesser chill in the slighter ones, with frontal headache, occasional vomiting or diarrhœa, and rapid and considerable rise of temperature, are all exactly what we are familiar with in other acute zymotic diseases, and are all unquestionably due to the sudden and rapid development in the body of fructifying germ life. In many of our cases, although there has been at first a little sneezing or a little 'cold in the head,' yet as a rule there has not been the active demand for pocket handkerchiefs and the strain upon the resources of this department witnessed on some former occasions. It has been plain that, although some local effect has been produced upon the nasal, naso-frontal, and pharyngeal mucous membranes, the morbid influence has been more especially exerted upon the system through the blood or the nerve centres, and then secondly upon the pulmonary organs. I say secondarily, because in some of the cases capillary bronchitis, pulmonary congestion, or inflammation and localised pleurisy have arisen or shown themselves more than a week after the attack, and where there could have been no possible exposure to chill after the seizure. To this condition we have, I think, some sort of analogy in the bronchitic or pneumonic trouble usually appearing in the second week of typhoid fever.

"As elsewhere, the invasion of the disease has often been extremely sudden, in the midst of perfect health. Besides the chill or rigor, there has then been usually a sudden sense of extreme illness, and of prostration of nerve power,

the patient instinctively feeling that he *must* go to bed and get warm; and if a thermometer be used, the temperature is soon found to range from 101° to 104°, according to the severity of the seizure. Besides these, the patient has generally complained of pain, often severe, of the forehead, or more generally behind the eyeballs, of pain 'all over him,' or of the limbs, or not infrequently of pain of and below the waist and in the upper abdomen, this last being in many cases a marked and noticeable symptom. In a large number of cases these acute symptoms have passed off in from twenty-four to forty-eight hours, and the patient, though feeling poorly, has begun to convalesce. But out of a large household there has frequently been one member of the family, or more, in whom the illness has not so subsided, in whom the sensations of illness have continued, and in whom thoracic oppression, diaphragmatic pain, and some cough have gradually supervened.

"The dyspnœa in these cases has sometimes been a striking feature, disproportionate to the extent of lung tissue affected, and occasionally of itself becoming a most formidable symptom. It is doubtless due to a condition of partial 'pulmonary paralysis,' and has been accompanied with a sense of extreme feebleness and helpless prostration. In these cases it has been noted that the muscular sound and the action of the heart have been extremely feeble, whilst the pulse at the wrist has been small and even thready. In the capillary bronchitis, the congestive pneumonia, or the pleurisy which has followed, the same sense of dyspnœa and prostration has continued in a marked degree; and although the pulse has been quick and the temperature high, yet there has sometimes been marked

pallor of the skin, with a cool and clammy perspiration, and a cold feeling of the extremities, much as was noted by me as occurring in 1878—this condition pointing to cardiac asthenia more than to the apnœal and dyspnœal results of the pulmonary engorgement. Occasionally some limited pleurisy has developed itself at the base of the lung, and in these cases it has been noted how unusually acute has been the pain which accompanied it—a pain greater and more lasting than that of ordinary pleurisy (almost as if acute neuralgia of the part were superadded), and sometimes requiring considerable doses of opium or even injections of morphia for its alleviation.

"The expectoration has varied greatly, sometimes scanty and colourless, at other times abundant, rusty, viscid, and truly pneumonic. The cough has rarely been severe or distressing. The decubitus, unlike that of ordinary pneumonia, has sometimes been remarkable. Even when a considerable part of one lung or portions of both have been choked by congestion, and when the difficulty of breathing has been considerable, I have seen patients lying almost flat down upon the bed, perspiring, pale, and evidently thus seeking relief to the cardiac asthenia and difficulty, more than to the effects of the pulmonary inflammation.

"As to treatment. As might be expected when the cause is so definitely specific, it has not been always so immediately effective as might be wished. The slighter cases have soon got well of themselves, but many of them have required considerable nursing care afterwards. In the severer ones, without the addition of thoracic inflammation, prolonged rest in bed, warm liquid or semi-liquid feeding, a little wine, and some cinchona or quinine with

ammonia or ether, have appeared to be suitable and helpful.

"Antipyrin, when given, reduced the temperature one or two degrees, and sometimes relieved the headache, but it has not appeared to produce any markedly good effect upon the course or duration of the disease. Ammonia, ether, bark, quinine, or salicine, and other remedies have variably been given during the inflammatory illness, and these, or some of them, have apparently at times been of some service; whilst sulphuric ether has occasionally helped the dyspnœa. Mild terebinthinate inhalations also have somewhat comforted the nasal and throat troubles. But the most marked and the most real advantage has been derived from the free and continued use of fluid nutriment of all varieties, with champagne or other wine or brandy. Perhaps the champagne (iced or not, as preferred) has been most useful as well as grateful; but brandy in considerable quantities has sometimes been given with manifest advantages, especially where the asthenic condition has been very marked.

"Upon the whole, my experience is that the treatment has been most effective when conducted on the theory of our having a specific fever to deal with, and of attempting to sustain the life and to guide the patient through it, rather than from active or violent attempts to subjugate the disease or its inflammatory complications. I have not seen any of these suddenly or even distinctly successful."

INFLUENZA IN 1891.

(*Read in the Section of Public Medicine at the Annual Meeting of the British Medical Association held in Bournemouth, July*, 1891, *and reprinted from* THE BRITISH MEDICAL JOURNAL *of August 8th*, 1891.)

"ALTHOUGH the disease, Influenza, appears to be now again rapidly abating, yet it has recently prevailed so extensively and has occupied so large a portion of our professional attention that we may well at the present time give it the very fullest consideration; and this the more because not only does its study throw light upon other epidemic diseases, but the disease itself will probably soon have disappeared, and so the opportunity of investigating it will have gone for an indefinite period.

"Influenza has been so widely and severely present, both this year and last year, that medical thought has necessarily been largely concentrated upon it; and, thanks not only to the efforts of the medical officers of the Local Government Board, but also to those of many other observers, our exact knowledge and understanding of the disease have been very materially increased. In one notable respect, however, our knowledge has not yet become

so exact as could be wished, for, although Drs. Jolles, Weichelbaum, and others have claimed to have defined and differentiated the bacillus of Influenza, yet I fear we are unable to say that its special identification is yet assured, although we must all feel certain that the specific bacillus is present awaiting demonstration, inasmuch as a contagious and multiplying germ must be a living one and have a material presence.

"In East Anglia we last year suffered largely and widely from Influenza, and we have again in the present year (1891) been visited with an extensive outbreak of the disease, after a distinct and prolonged period of quiescence. Although similar in general features, yet in many respects this year's visitation has differed from that of 1890. In the first place, the period of its recrudescence in a widely-diffused or epidemic form was considerably later in the present year. In 1890 it began to prevail in January and February, and in scattered cases as early as December and November of 1889. But in this year in this district the disease did not become common or severe until the months of April, May, and June. On the other hand, its epidemic prevalence in 1891 was preceded by severe influenzal, or 'pink-eye,' disease amongst horses, which was not the case last year. Further, I think that, although the Influenza of last year showed far less affection of the lachrymal and naso-oral mucous membranes than had been observed in several previous epidemics—and I can well remember the profuse nasal and bronchial catarrhs so common in 1847—yet that this special symptom has this year been still less prominent than even in 1890.

"I have said that there has been less pure catarrh in the

Influenza cases this year. But, on the other hand, the irritative affection of the bronchial mucous membranes has been very constant, and often very extensive. In my experience, it has varied from the slightest development of wheeziness or scattered sibilant *râles* to the most extensive and general affection of the bronchial tract—often so general and producing so much mucous and nervous irritation that it caused profuse bronchorrhœal osmosis; or, on the other hand, the attack might almost have been mistaken for one of acute but dry spasmodic asthma. Often the bronchial affection has, here as elsewhere, been accompanied or followed by inflammation of the lung tissue or of the pleural surface, the pulmonary inflammation being generally lobular, of the congestive form, and not very prone to run into dense consolidation; whilst the pleurisy has often been acute, and very often leading to considerable pleural effusion, frequently of a purulent character.

"In considering these inflammatory cases no doubt some caution is necessary. Doubtless most of them are true influenzal inflammations, and probably all of them are influenced or modified by the specialised condition of the atmosphere. Still, we should remember that pneumonias and pleurisies are common in England in the earlier half of every year; and possibly not every chest inflammation lately seen has been of this class. On the other hand, the type of these cases, where no special guiding symptoms have been present, has usually been such as to incline to the influenzal view. And certainly the disastrous results which I have occasionally witnessed, where depleting measures and other such attempts to 'cure' the inflammations have been resorted to, have influenced my mind to

the strong conviction that the only safe course at present is to regard them as all of the epidemic type, and to act accordingly.

"In this year, as in the last, the special influence of the influenzal poison appears to have been very variously exerted. Almost any organ or function of the body has seemed liable to be affected, that special tissue or organ suffering the most according to the varying susceptibility of the individual or the weakness or peculiarity of the part. But as in other epidemics, not only of this but of other widespread disorders, the entire resistance of many human organisms to the disease has been very remarkable, certain individuals having very constantly escaped in a house quite full of the disease; and from this entire immunity to extreme susceptibility there would appear to have been every degree of liability. As an example of the susceptibility of weakened tissue to such infection, I have recently seen a case of an elderly lady suffering from one-sided chronic emphysematous bronchitis, limited to the base of one lung, and who, on being suddenly seized with influenza, developed the usual moist and sibilant bronchial *râles* over the whole of the rest of this lung, the other lung remaining unaffected throughout the attack.

"In another and very important respect our experiences of this year differ materially from those of 1890, namely, in the far lesser prominence of acute nerve pains of the trunk at the commencement of the illness, and the less frequency and severity of those nervous sequelæ which were then so common and so distressing. Many of those specialised nervous sequelæ were described by me at length in a paper which I read before the East Anglian

Branch of this Association, and, amongst others, I mentioned painful local affections or neuralgias; hyperæsthesia or anæsthesia of the arms, hands, back, legs, feet, gums, nose, or other portions of the skin; a sleepy or dulled condition of the brain; and many other secondary or allied affections.

"On the other hand, it has appeared to me and to those with whom I have conferred, that during the present year primary disorders of the brain and mind have been exceptionally common, much more so than in 1890. Every degree of mental disturbance has been observed, from simple apathy, drowsiness, or dulness of mind, through various degrees of mental depression or of excitement, up to delirium and absolute mania, and this latter so frequently as to constitute a special feature of this year's epidemic.

"It is here worthy of notice that these nervous sequelæ were almost entirely of the sensory nerves, in this respect forming a marked contrast to the paralytic sequelæ of diphtheria, in which disease the motor system is more especially involved; also, whilst in diphtheria the paralysis of the throat and head often showed themselves early after the commencement of the illness, and in the extremities usually within six weeks, in Influenza the truly nervous sequelæ rarely appeared before eight weeks after seizure.

"From the remarks of various writers upon Influenza, I judge that after many of the epidemics these nervous phenomena have not been very prominent conditions, as, although generally mentioned, they are scarcely described at all fully by any modern author except Dr. Theophilus Thompson, writing in 1840 in the *Library of Medicine*.

"Then as to the fatality. Although, if anything, more general and diffused, I think the disease has this year been sensibly milder, and has claimed on the whole fewer victims. Pulmonary inflammation, so-called, has been the most common cause of death, but in the very old and the previously diseased, unquestionably cardiac and general nervous asthenia has been often the apparent cause of failure. But neither as to 1890 or 1891 do I think we should be justified in repeating the assertion made by one writer on this subject as to the epidemic of 1738, that 'the Influenza was specially fatal in Norwich.'

"It has been observed by several most competent practitioners in this district that although one attack has not appeared absolutely to protect those who suffered last year from illness again this season, yet that in the most remarkable way villages in which the Influenza prevailed extensively in 1890 have been almost or quite free from the disease in this present year, whilst adjacent villages scarcely affected before have quite recently been generally and severely attacked.

"The question of the communicability of Influenza has been so fully and so ably discussed by Dr. Parsons in his recent report to the Local Government Board, that I will only say that the general experience of the epidemic in this eastern district tends to confirm the views he has there expressed. No doubt many peculiar facts connected with its propagation remain to be explained; but, beyond this, the mere discussion of its contagiousness or of its infectiousness is clearly superfluous, seeing that these two terms merely imply a varying volatility of the seeds or germs.

"A very curious circumstance bearing upon this point

was mentioned to me a few days ago. A gentleman called upon me suffering from distinct but mild Influenza, who told me that he traced his attack to having licked with his tongue for the purpose of sealing it the gum of an envelope sent to him for return in a letter from a correspondent, who wrote that he was suffering severely from the disease. He said that he immediately felt that he had done a foolish thing; and curiously enough in about forty-eight hours from this time he was himself seized with Influenza. If he was correct in his view, this simple incident would show positively (1) that the disease-germ is capable of adhering to solid substances, which may thus become the medium of its communication; (2) that it is communicable by contact with the mucous membrane of the mouth; and (3) that the period of its incubation is, or may be, about two days.

"The experience of us all has doubtless shown the most infinite variety of so-called seizures. As last year, and as always, I believe sudden headache, pain of the back and lower limbs, fever, and more or less irritation of the respiratory membranes, have been the usual initial signs, with not infrequently some nausea, vomiting, or diarrhœa, superadded. But none of these have been absolutely constant, and they severally have varied greatly in degree and intensity. Chills and rigors have been not infrequent at the commencement of the attack, but these have not been necessarily present, although a sense of shock, of great prostration and debility have been so nearly always, in greater or less degree. Neither has any special lachrymal irritation been observed, as stated by Dr. Besly Thorne.

"These introductory or primary symptoms have, as

usual, been followed after an interval of hours or days by other signs which may well be called secondary; such as catarrh, tonsillitis, bronchitis, pneumonia, pleurisy, or, indeed, irritation or inflammation of almost any or every viscus, as well as of the skin and of the nerves or nerve centres. An excellent summary of these various affections has recently been given in the *British Medical Journal* by Dr. Nicholson.

"Amongst the rarer secondary affections of which I have recently seen examples may be mentioned profuse bronchorrhœa; inflammation and swelling of the throat glands; a scarlatina-like eruption; swelling of and effusion into the knee-joint; acute alopecia (?); intense sleepiness—the so-called 'nona;' and puerperal symptoms, scarcely distinguishable from those of ordinary septicæmia; whilst other and later affections have been not uncommon, though scarcely so much so as last year, such as empyema, purulent mucous discharges from the nose or ear, albuminous or bloody urine, or a recrudescence or revival of the disease from slight causes, and a markedly abiding cardiac and general asthenia.

"Several cases of a most distressing nature have recently occurred in this district, and in the practice of different and widely separated medical men, where the patient was located in a house or district in which Influenza was prevalent, and who developed symptoms indistinguishable from ordinary puerperal septicæmia or so-called 'puerperal fever' within one, two, or more days after a prosperous confinement. The seizure was attended with shivering, high temperature, more or less altered uterine discharges and mammary secretions, and other indications of blood

contamination; and in at least one of these cases the termination was a fatal one. In these patients no ordinary cause of septic poisoning could be detected, and the infection appeared to be fairly attributable to the prevailing epidemic influence.

"As to the probable causes of these variations of the disease as seen in 1890 and 1891—as we have not yet had time to forget, the winter and spring of this year, have been singularly cold and dull, the temperature has been persistently low, and there has been a minimum of sunshine; and these assumed unfavourable atmospheric conditions may very possibly have modified the vitality and the infecting power of the germ cause. They may, in fact, have delayed its appearance by lowering its vital activity. Or, again, other possible causes more referable to the human subject may have been the potent factors in the case. Suitable and abundant food, no doubt, are as essential to the full activity and potentiality of minute germs as of larger animated beings. And how such matters as appropriate food and other conditions do affect and modify some bacillary growths will be well remembered by those now present who were able to attend the demonstration on this subject in the Cambridge laboratory at the conjoint meeting of the East Anglian, Cambs and Hunts and South Midland branches in June; for we were there able to see with our own eyes the remarkable differences of colour and appearance produced by growing certain bacilli under different conditions and in different media. So that it may well be that a different condition of the human prey may have had the larger influence over the variability of this year's phenomena.

"This disease being doubtless, like other infectious disorders, due to the implantation upon the mucous membrane of living germs, which subsequently multiply, and infect the system after a period of so-called incubation—this being the case, it would appear to be highly probable that the so-called seizure, the sudden attack, is due rather to a commencing secondary poisoning of the blood, nerve centres, and tissues, than to the mere shock from the reception of the living cause upon the surface membranes.

"We all know that the ordinary symptoms of an Influenzal attack are headache, pains of the back and lower limbs, fever, and various other indications of systemic irritation and alarm; and Dr. Theodore Williams quite recently, in describing the effects of the injection of Koch's tuberculin, stated them as 'rigors, fever, pain in the limbs, languor, great fatigue, often vomiting, increase of cough and expectoration, and occasionally an eruption like measles;' whilst Virchow has further spoken of 'catarrhal pneumonia' as one of the effects of the injection.

"Professor Koch tells us that this tuberculin is a 'glycerine extract of pure cultivation of tubercle bacilli in which the parasites have been killed.' In other words, the product of bacilli is the active material injected as tuberculin.

"As the symptoms of these two morbid conditions are so similar, indeed, almost identical, I suggest that this fact lends strong probability to the view that the secretion of these bacilli is the lethal agent in producing the severe results both in Influenza and in other allied diseases, and that the early life and multiplication of the infecting parasite is represented by the comparatively innocuous

incubation period, which in the case of the Influenza germ has been passed on the mucous membrane of the invaded individual, but in the case of the tuberculin-bacillus has been passed in a prior host. And it is a further point for notice that as the injection of tuberculin appears often to set free tubercle bacilli, and to promote the fresh advance of phthisical disease, so unquestionably last year in the experience of practitioners in this district, phthisis was infinitely more prevalent than in many previous seasons. If this is the true order and sequence of the phenomena, and if the apparently primary symptoms are really but secondary, and the sign of absorption of bacillary products, then doubtless the same holds with the numerous other diseases due to these minute living bodies.

"I fear that our increased experience has not shown us any specific remedy capable of controlling the disease, unless salicin or the salicylates may in some degree possess this power. As its main effect is to depress nervous vitality, so the avoidance of any debilitating treatment has been the first essential principle, and all measures calculated to rest and comfort and support the patient the second. Of drugs, I think that antipyrin in five-grain doses has held its ground as the most effective remedy for the primary headache; whilst for the bronchial irritation and inflammation, nothing has appeared to be so generally useful as the carbonate, or the spirit of ammonia with tincture of bark, combined with chloric or sulphuric ether as required. Champagne, or other wine, or some spirit, has been most valuable; and warmth externally, anodyne embrocations, and inhalations of carbolic acid with conium have proved most useful in suitable cases; also, after the

existence of the disease for some days or longer, the tincture of iron with quinine and a mineral acid has occasionally given distinct relief. The treatment by iron has of late been specially recommended, but we must not forget that in 1847 Sir Thomas Watson wrote: 'I know no tonics so good as the sulphate of quinine or of iron for these patients.' The iron salt would appear to be specially useful in those cases where a suppurative or alkaline tendency has shown itself."

INFLUENZA IN LOCAL PUBLIC INSTITUTIONS.

It is interesting to note the varied way in which the Influenza has affected the inmates of our larger public Institutions:—the details of its occurrence in which have been kindly furnished to me by the respective medical officers or medical superintendents. It will be seen that the disease fell with varying force and incidence upon them, but nevertheless the type of the affection was very similar throughout, and usually the attack and special spmptoms noted were the typical ones observed amongst the general public.

As elsewhere and in private houses, the severity of the disease was as a rule greater in the first year of its appearance (1890) than in the second. The total direct mortality from it in these establishments appears to have been extremely small; while in several of them no death occurred. The cause of death when occurring, being pulmonary, and either pneumonic or broncho-pneumonic.

It is notable, that a larger proportion of the officers of the various establishments, as well as of the nurses or attendants and servants, was, as a rule, attacked, than of the patients or inmates. Relative local situation appears scarcely to have influenced its appearance or severity.

The chief points which these returns illustrate, are:—

1. The traceable introduction of the disease from without in the Norfolk and Norwich Hospital, and the Hellesdon City Asylum:

2. The general absence of *important* catarrh or of severe bronchial symptoms in a large number of the patients, and in all the mild cases.

3. The remarkably slight contagiousness of the disease noted, especially as observed amongst the prisoners in the Norwich prison.

4. The immunity of the *children* in the children's ward of the Norfolk and Norwich Hospital from the disease.

5. The peculiar and striking sleepiness observed amongst the little children attacked in the Jenny Lind Infirmary on the first day of their illness.

6. The larger proportion of the staff and servants attacked (as a rule) in the various Institutions, than of patients or other inmates.

Norfolk and Norwich Hospital. The usual number of patients in this Hospital varies considerably, but averages about 140. In addition there are about 35 nurses, 17 servants, and three resident officers. Total about 200 persons.

At no time in either 1890 or 1891, was there any large amount of Influenza present in this Institution, but a few patients were affected in the first half of 1890, commencing in January, but not very severely; whilst a considerable

number (about 12) of the staff and household were more or less ill with it.

In 1891, it may be said scarcely to have been present in the wards, but a few of the resident staff, etc., suffered slightly from it, chiefly in the month of April. In neither year were the young children in the large ward, devoted to them, and which usually contains about 35 patients, affected, but two or three adolescent girls in this ward did suffer mildly. A considerable number of cases of tertiary affections or sequelæ have since been admitted. They were chiefly of the neurasthenic class, markedly of the abdomen or abdominal organs, but there have also been cases of pleural effusion, and various paretic neuroses.

Dr. Bateman had no cases amongst his in-patients in either year.

Dr. Barton tells me that the first of his cases in 1890 was a young man who appeared to have been infected by his father, who visited him in the hospital whilst himself convalescing from an attack outside. This patient sickened with Influenza in twenty-four hours; and in three days five more cases in the same ward occurred.

He also says that neuritic sequelæ and nervine weaknesses have been exceedingly frequent amongst the hospital out-patients this year as well as last.

Dr. Burton-Fanning in 1891 had a specially curious sequela of Influenza in the case of a young girl who had acute and general alopecia of the scalp after each of two distinct attacks of this disease; but no cases of primary Influenza.

The abstracts of notes of ten cases carefully observed by Mr. Nance in 1890, whilst House Surgeon to the

Norfolk and Norwich Hospital, and the records of which have been kindly furnished to me by him, are given in the appendix. They are chiefly of female patients, whose seizures were more severe than those of the males. None of them were extremely bad cases, but they illustrate several peculiarities of the disease; as well as the slight amount of contagious influence upon neighbouring patients.

Mr. Reginald Crosse, the present House Surgeon, tells me that he has had no definite outbreak of Influenza amongst the patients in this present year—1891.

Jenny Lind Infirmary for Sick Children. Situated in Pottergate Street, on the lower level of the City: average number of inmates about 35:—patients, 25, household, nurses, and servants, 10.

Miss Wainwright, Lady Superintendent, informs me that in 1890, Influenza appeared in the Infirmary on January 5th. After this date thirteen children, and five nurses and servants, suffered from it. The single servant who was ill was the wardmaid, whilst the cook and housemaid (whose duties do not take them into the wards) escaped. The usual mode of seizure was, in the case of the children, sudden rise of temperature, headache, and *extreme drowsiness.* In the adults, the symptoms at the onset were, headache, backache and pains in the limbs, with fever. No death occurred from the disease.

There were no cases of Influenza in this Infirmary in 1891.

Norwich Bethel Asylum. Situated in Bethel Street, Norwich. Number of patients about 74. Number of household about 25.

Dr. Fielding, resident Medical Superintendent, tells me that neither in 1890 nor in 1891 did any of the patients suffer from Influenza.

In 1890, four of the household were attacked, thus:—

The cook became ill on March 10th. She was attended to by the matron of the Institution and the sewing-maid. On March 16th, the matron fell ill; on March 18th, the servant; and on March 24th, six days later, the master became affected with the disease. It then died out. In 1891, one attendant suffered from it, and no other person.

Dr. Fielding expresses the opinion, derived from his own observation, that the period during which a convalescent can impart or convey the disease to another individual is very short, and usually not exceeding a week from the subsidence of distinct illness.

Norwich Workhouse. This establishment is situated about a mile from Norwich, between the Earlham and Dereham roads. It is on a fairly high level, and is not closely approached by any number of houses.

Mr. Cecil Muriel, Surgeon to the House, informs me that in 1890, the first cases of Influenza occurred on January 23rd; but in 1891 not until the 29th of May.

The average number of inmates was, in 1890, about 665, namely, 641 poor persons, and 24 of the household and staff. In 1891, there was an average of 572 poor, and of 24 of other residents. In 1890, the number of per-

sons attacked was 43, namely, 35 poor inmates, and 8 of the household, and attendants and servants. And the usual initial symptoms were headache, with pains in the back and limbs; the high temperature generally lasting either two, or three, or four days. No death occurred in this year.

In 1891, only three of the poor, and none of the other inmates were attacked. The special symptoms noticed were much gastric disturbance, with catarrh, and bronchitic rales; and the duration of the primary symptoms was often prolonged to six or seven days. One death occurred, from pneumonia.

Norwich Grammar School. Situated in the Cathedral Close, Norwich.

1890. Number of resident pupils, 18; of other inmates, 15.

1891. Number of resident pupils, 25; of other inmates, 10.

The Head Master (Rev. E. F. Gilbard) informs me that in neither year were any of the pupils attacked; but that one member of the household suffered from Influenza in 1890.

St. Giles's (Old Man's) Hospital. Situated in the meadows of St. Helen's parish, almost on the level of and near to the river, and much overshadowed or protected by surrounding hills and buildings.

Usual number of old people resident, male and female, about 192; of staff with nurses and servants, 20. The age of the inmates when elected must be at least sixty-five years, and they vary from this age to ninety and upwards, many being very old.

Dr. Beverley, the Medical Officer of the Hospital, tells me that of the few cases of Influenza which occurred in it, the majority were comparatively mild; and no death resulted from it. In 1890, one inmate and one member of the household were attacked. In June, 1891, 4 male and 9 female inmates (distributed through six out of ten wards) and three members of the Master's household were ill with it. No nurses or servants were affected in either year.

Mr. Cox, the resident Master, observes upon the remarkable freedom of this St. Giles's Hospital from epidemic disease, both in the past two years, and in the presence of other and former epidemics. He notes this as the more remarkable, because the customs of the Hospital would appear to be favourable to the introduction of contagious disease; *i.e.*, the inmates enjoy the liberty of going out, and do daily visit houses in all parts of the city, and then return to the wards and cottages. He also thinks the somewhat close atmosphere of the wards might be expected to favour the occurrence of epidemic disease; a condition produced by the preference of the aged people for warmth instead of ventilation. The general immunity of the Hospital from contagion would therefore seem to be a noticeable fact.

Norwich Asylum for the Blind. Situated in Magdalen Street, in the lower level of the city. Number of inmates, in 1890, 41, and in 1891, 48 blind persons, and 11 of the staff and household.

Dr. Odhams, the medical attendant of the Hospital, says that in 1890 no case of Influenza occurred in the institution. In June, 1891, one (only) of the male inmates was attacked. The symptoms in this case were the usual ones, of frontal and dorsal pains, great feeling of general *malaise*, and a raised temperature (to 102·5°), which subsided in forty-eight hours, and the patient recovered.

The Cavalry and Infantry Barracks, Norwich. These Barracks are situated on the edge of Mousehold Hill, the Cavalry buildings being nearly at its foot, and the Britannia (Infantry) Barracks on a higher level. The great expanse of the Mousehold Heath is behind them both.

It will be observed that the proportion of individuals attacked with Influenza was very much greater in 1890 than in 1891.

The following table and noted facts have been furnished me by Surgeon-Major Morphew, in medical charge of the troops:—

1890.

	Cavalry.		Infantry.	
	Strength.	Admissions.	Strength.	Admissions.
Soldiers ...	281	63	173	50
Officers ...	19	2	6	1
Women ...	34	7	46	7
Children ...	42	12	140	2
	376	84	365	60

1891.

Soldiers ...	300	1	150	9
Officers ...	16	2	9	1
Women ...	33	1	55	4
Children ...	40	1	130	1
	389	5	344	15

In 1890 the Influenza made its first appearance among the troops on the 3rd of January, and did not terminate until the 26th March. This caused 114 admissions. There were rather more admissions amongst the cavalry than the infantry soldiers absolutely, namely 84 to 60, being a proportion of about 1 in 4⅓, but less relatively; the proportion of soldiers attacked of the Norfolk Infantry Battalion being about 1 in 3½. In 1891, the numbers in both barracks were much less, both as regards soldiers and other residents.

In all cases the disease was ushered in with great prostration, and heightened temperature—which in the majority of the patients ranged between 99° and 102°, but in a few instances reached 105°. There was an absence of catarrhal symptoms in very many of the cases, and in those in which they did appear, they followed the first days of pyrexia. In a few of the patients there was an erythematous rash on the face and chest, which lasted only a few days. Debility generally followed, and the pains in the back and extremities were in some of the cases very persistent. The treatment adopted was stimulating expectorants, diaphoretics, and during convalescence, quinine and iron. All the patients recovered.

Norwich Prison. Situated on Mousehold, on very high and open ground.

Average number of resident prisoners, about 100. Average number of officers, 12.

Mr. Robinson, Surgeon to the Prison, informs me that in 1890, the number of prisoners who suffered from Influenza was 12, and of officers 7. In 1891, 6 prisoners, and 2 officers, so suffered. The cases were in no instance very severe: no pneumonia developed itself; and no death occurred. The disease first appeared, in 1890, on January 26th; and in 1891, on April 23rd.

The average duration of real illness was three days. The symptoms were, pains in the head and back, cough—sometimes loud and "hacking," and almost dry—and sibilant rales, with very scanty expectoration. There was an almost entire absence of ordinary catarrh, and scarcely any coryza.

Mr. Robinson was struck with what appeared to be the small degree of contagiousness manifested. The prisoners are and were associated during illness in contiguous cells, on the corridors; and moreover, when convalescing, took exercise together in the prison yards, yet no necessary contagion or spread of the disease appeared to result.

Heigham Hall Asylum, Norwich. Dr. Compton, resident Medical Superintendent, has furnished me with the following particulars.

In 1890, the inmates were scarcely at all affected. They numbered rather more than one hundred, of which about 77 were patients and 25 officers, attendants, and others.

The numbers were practically the same in 1891, when, of the 45 ladies, 10 were attacked; and of the 32 gentlemen, 5. Of the attendants and servants, 17 were affected.

In 1891, he says "The patients and attendants on the male side of the establishment were first attacked in March and April. A fresh 'wave' seemed then to introduce Influenza to the female wing in June, when no less than 31 patients and attendants were attacked, and suffered more or less severely from its effects. All under treatment recovered, but the majority of those stricken were troubled for some time with bronchial catarrh, and neurasthenia, and great prostration. The mental condition of the insane was not in any way affected by the epidemic."

The usual mode of attack was with headache, aching of the limbs, pain of the back, and raised temperature. This last varied from 102° to 104° Fahr., and generally subsided to normal in forty-eight hours.

In one case, there was acute and recurring erythematous urticaria, with relapsing bronchitis, and congestion of the base of one lung, but the patient recovered.

In one very elderly lady (82 years) who had had previous attacks of bronchitis, bronchial rales, with congestive signs at the bases of the lungs, lasted three or four weeks; but with extreme care, warmth, and prolonged rest in bed, they slowly passed away, and she made a complete recovery.

No deaths occurred from the disease.

Norwich City Asylum.—This Asylum is located at Hellesdon, about two miles from Norwich, and stands upon high and open hill ground. In 1890 it contained 246 patients, and 38 officials and other residents. In 1891, the number of patients averaged 264, and of officers, attendants, and servants, 43.

The inmates were affected to a certain extent both in 1890 and 1891.

Dr. Harris, Resident Medical Superintendent, says, in 1890, 10 patients (4 male and 6 female) were attacked with Influenza; and no less than 36 of the officials and servants, besides 8 artizans employed about the establishment though not resident in it. Three or four deaths occurred, more or less entirely due to Influenza or its bronchitic or pneumonic complications.

He says:—The disease usually commenced with signs as of a severe cold, pains in the head and limbs and loins and back, and some coryza, and all those attacked complained of general lassitude. The usual duration of high

temperature was from twelve to twenty-four hours. Many of the cases were of the distinctly bilious type, and forcibly reminded me of cases of malarial fever formerly seen by me in the West Indies. Giddiness or a sensation of unsteadiness in standing or walking was frequently complained of. One or two of the patients presented a scarlatina-like rash. Convalescence was often very protracted.

Dr. Harris adds, that he believes he was personally the medium of introducing the disease into the asylum. He says, "On the night of January 2nd, 1890, I travelled from London to Norwich by the night mail, with only a single fellow passenger, who was then suffering from Influenza. I shortly fell ill with it; then my boy who slept with me; and in immediate succession, my daughter, her governess, some house servants, nurses and attendants, and the patients mentioned above."

In 1891, but few cases occurred. Three (female) patients only were attacked, in addition to two house servants, and one of the gardeners. This outbreak was in March, and it was noticed that there was much less coryza present than in the cases of the preceding year. The only mental change produced by the disease in either year appeared to be an increase of depression in the melancholic cases.

Norfolk County Lunatic Asylum, situated at Thorpe, three miles from Norwich.

This Asylum consists of two separate and detached buildings, the aggregate number of patients in the two

being 700, namely, 300 males and 400 females. There is besides a large staff of officers, attendants, and servants.

Dr. Thomson, Medical Superintendent of the Asylum, informs me—

With regard to the 1890 epidemic, that in this outbreak, which commenced in January, about 74 of the patients were attacked, and that of these two died, the cause of death being in both cases pneumonia. The prominent symptoms, as recorded by Dr. Little, Assistant Medical Officer, were—frontal headache, pain in the lumbar region and limbs, prostration, coryza, cough, nausea, constipation, hoarseness, redness of fauces, diarrhœa, melœna, colic, epistaxis, herpes of face, erythema of face, general rash, neuralgia, discharge from ear.

The complications of the attack, were bronchial catarrh, bronchitis, bronchial asthma, lobar pneumonia, ulceration of tonsils, erysipelas, menorrhagia, otorrhœa, erythema of leg.

The temperature was in all cases raised, in a few only slightly so, namely (in three cases) to 98·8° Fahr., whilst in the rest it varied from 99° to 104°, and in one case it rose to 104·6°. In every case the temperature was subnormal for some three or four days after its subsidence.

The duration of the illness was, of 61 cases specially noted—

1 day in 5 cases.
2 days in 16 cases.
3 days in 14 cases.
4 days in 6 cases.
5 days in 4 cases.
6 days in 3 cases.

7 days in 5 cases.
8 days in 2 cases.
9 days in 2 cases.
10 days in 2 cases.
17 days in 1 case.
5 weeks in 1 case.

Fourteen cases of "relapse" are mentioned.

The following extract from Dr. Thomson's Annual Report for 1890 gives a few additional particulars:—

"Influenza broke out about the middle of January, somewhat later than elsewhere in the neighbourhood, and lasted for two months. Cases occurred all over the establishment, here and there on an average one fresh case a day. The female patients suffered much more than the male. There were 60 female patients (out of 400) affected and only 14 male (out of 300). The only part of the building enjoying almost complete immunity was the female division at the Auxiliary Asylum. Of the 74 cases two died from secondary pneumonia. All ages and all forms of insanity were alike attacked. The staff also suffered, 2 out of 3 medical officers, all the other officers, all the nurses, and 17 out of 24 male attendants."

As regards 1891, Dr. Thomson says:—"We have had desultory and occasional cases, one or two at a time, dotted over the building ever since the 1890 attack till now."

The following table gives a summary of the figures contained in the above thirteen returns. Including as they do, the sick in the various hospitals, and the aged

inmates of St. Giles's Almshouse, they show conclusively, not only how slight is the mortality from Influenza in public institutions generally, but also how non-fatal it is in these homes even where other ailments or advanced years have necessarily more or less undermined the vital resisting powers.

It will be seen that, in 1890, of 3305 persons thus grouped together, 437 are reported as having suffered from Influenza, or a little more than 13 per cent.; of these only 6 (all inmates of asylums) died; *i.e.*, one death in about 73 cases. In 1891, out of 3253 inmates, and 126 cases of illness, *i.e.*, about 4 per cent., only one death is reported.

The returns also show the enormous disproportion between the numbers of the *special* inmates attacked, as compared with those of the staff and nurses and general household. The relative *ratio* being, in 1890, about one in ten of the patients, &c., and about one in three and a half of the other residents; whilst in 1891, the *ratios* are about one in thirty-three, and one in twelve, respectively.

They further tend to confirm the view that, although the Influenza was widely diffused in 1891, yet that it was distinctly milder, and a far less serious danger to those attacked, in this second year of its presence, than it was in the latter part of 1889 and the first half of 1890.

And as to treatment, they very strongly indicate the first importance of home cure, which implies that of rest, and warmth, irrespective of any other measures which may be thought to be desirable.

	Average Number of Patients or Inmates.		Average Number of General Household.		Number of Patients Attacked.		Number of Household, &c., Attacked.		Deaths.		Cause of Death.	
	1890	1891	1890	1891	1890	1891	1890	1891	1890	1891	1890	1891
Norfolk & Norwich Hospital	140	140	55	55	14	—	12	5	—	—		
Jenny Lind Infirmary ...	25	25	10	10	13	—	5	—	—	—		
Bethel	74	74	25	25	—	—	4	1	—	—		
Workhouse	641	572	24	24	35	3	8	—	—	1		Pneumonia
Grammar School	18	25	15	10	—	—	1	—	—	—		
Old Man's Hospital	192	192	20	20	1	13	1	3	—	—		
Blind Asylum	41	41	11	11	—	—	—	1	—	—		
Barracks, Cavalry	281	300	*95	*89	63	1	21	4	—	—		
Barracks, Infantry	173	150	*192	*194	50	9	10	6	—	—		
Norwich Prison	100	100	12	12	12	6	7	2	—	—		
Heigham Hall Asylum ...	77	77	25	25	—	15	—	17	—	—		
Hellesdon Asylum	246	264	38	43	10	2	36	3	4	—	Broncho-Pneumonia	
Thorpe Asylum	700	700	75	75	74	30	60	5	2	—	Pneumonia	
	2708	2660	597	593	272	79	165	47	6	1		

* Including the women and children.

ILLUSTRATIVE CASES.

Case 1.—INFLUENZA, simple, typical, and uncomplicated.

A lady, aged 45, treated by Dr. Compton in June, 1891. She one day felt suddenly ill, and complained of pains in the head and back. The temperature was soon found to have risen to 103° Fahr.; and next day there was slight cough; and on examining the chest fine sibilant râles were heard in various parts of the lungs. The high temperature continued for two days, and then dropped to normal; and the patient was convalescing, although she complained of weakness and languor, and had an irritating cough, with slight mucous expectoration, for two or three weeks afterwards.*

Cases 2—11.—SIMPLE INFLUENZA, with only slight special symptoms or complications.

The following series of ten cases were carefully watched by Mr. Nance in the Norfolk and Norwich Hospital.

* Within the next few days following the seizure of this lady, several more of the lady patients in Heigham Hall were similarly attacked; and it was remarkable and interesting to observe the almost absolute identity of the illness in the several patients, both as to mode of seizure, and prominent symptoms, as well as duration of high temperature.

They are remarkable for the very small amount of bronchial irritation recorded.

The chief special symptoms noted, are profuse sweatings, in three; eruptions in two; shivering in two; coryza and suffusion of eyes, in three; vomiting in one; pulmonary catarrh in one; tonsillitis in two.

Case 2.—Female, adult, No. 8 ward. Attacked January 20th, 1890. Temperature on first and second days 103·6° Fahr.; on the fourth 99·8°, and after this normal. Excessive sweating on the fourth day. No chest signs.

Case 3.—Male, aged 19, No. 4 ward. Attacked January 26th. Temperature 102° on first day, normal afterwards. This patient had a very peculiar rash on and across the abdomen. It consisted of raised, flat, nodules, neither red nor painful, in crops like herpes, but nowhere vesicular.

Case 4.—Female, age 21. January 27th. No. 7 ward. An initial shaking fit, followed by the usual headache, slight coryza. Temperature 102·3°, normal on fourth night. Profuse sweatings on third day. (A special note says that the disease did not spread to either of the adjoining beds.)

Case 5.—No 8 ward. Female, aged 28. Coryza, suffusion of eyes, flushings. No rise of temperature. Well on third day.

Case 6.—Female, aged 16. Ward No. 7. February

1st. Sudden shaking fit, frontal headache, general muscular soreness, and sense of bruising, slight tonsillities, sweating. Temperature 100° on first day, 102° on second, normal on third.

Case 7.—February 1st. Female, aged 14. No. 3 ward. Felt sick and vomited, throat a little sore, eyes suffused, some erythematous rash on forehead, and a slight punctiform rash on the chest and abdomen, very pallid except where rash exists.

Case 8.—Female, aged 13. No. 3 ward. February 2nd. Much feeling of illness, eyes suffused, pain of eyes. Temperature did not exceed 101°, slight pulmonary catarrh.

Case 9.—Female, aged 8. February 3rd. Coryza, suffusion of eyes, frontal headache. Soon recovered. Temperature only slightly raised.

Case 10.—Female, aged 12. February 3rd. Headache, suffusion of eyes. Temperature 102°. Quickly convalescent.

Case 11.—Female, adult. In gardener's cottage, and away from hospital wards. January 24th, 1890. Listless, languid, eyes suffused, pains of head, and all down neck and back. No chest symptoms. Speedily convalescent.

Case 12.—Influenza. Double pneumonia. Cardiac dyspnœa. Profuse sweating. Rapid convalescence.

Miss —, aged 20 years. Seen January 20th, 1890, with Mr. Woodman. Was taken slightly ill on January 8th, after supposed slight exposure; but, as she believes, from inhaling the breath of a person convalescent from Influenza, which was then prevailing in the district. Although she had at first a slight shivering, she continued to move about until January 13th, when she again exposed herself to cold. She then fainted in church, and in the evening had a distinct chilliness or rigor. In the course of the next two days she developed distinct pneumonia, first of the right base, then also of the left, with some rusty expectoration; and the temperature rose to 104°, and the pulse to 130.

At the time of my visit, the pneumonic signs of bronchial breathing, and a small amount of crepitation in the lower third of each lung, still continued; and there was present also an extreme amount of diffused sweating, as well as of cardiac dyspnœa and faintness. The heart sounds were extremely feeble; the pulse was small and quick; and the patient was restless and choosing the supine position as the easiest for her breathing. She was treated with champagne or brandy as desired, besides ether and cinchona. Next day she began to improve, the lungs rapidly cleared, and she convalesced so quickly both as to lungs and heart, as to surprise those in medical charge of the case.

Case 13. — INFLUENZA. Acute intercostal and diaphragmatic nerve pain; (?) neuritis; gradual recovery from the acute symptoms.

Mrs. Y., æt. 36. Seen December 28th, 1889, with Mr. Hughes. This case occurred in the very early period of the epidemic, before other and similar examples of acute nerve pain had been encountered, and it was at that time difficult to understand. The lady had long been subject to recurring attacks of asthma, but this illness bore no resemblance to these seizures. When seen by me this lady had been ill five days. At first she had had shivering, followed by raised temperature, and then very severe pain of the left side, which had urgently required anodynes for its relief. There had been scarcely any (if any) cough or expectoration. She was still complaining of very severe pain referred to the lower edge of the ribs on the left side, along the insertion of the diaphragm, and along some of the intercostal spaces towards the back. This whole region was very tender to pressure or manipulation; and a deep inspiration caused a serious increase of the pain.

Examined. The pulse was 96, and the temperature 100·5°. She was flushed. The abdomen was full and tense. The heart's action was very soft and weak. The lungs showed on inspiration some sibilant rales in their upper portions. No other rales and no friction sounds were to be heard. There was no dullness on percussion. The left base was rather hyper-resonant. The urine was high-coloured and turbid but otherwise free from abnormality.

The patient was ordered repeated doses of a mixture containing chloral hydrate, bromide of potassium, and morphia,—with a suggestion of the subcutaneous injection of morphia, if necessary, with plenty of warm fomentations.

I afterwards learned that she soon obtained relief from

the acuteness of the pains, but that she remained very weakly and delicate.

Case 14.—INFLUENZA. Senile "bronchitis." Normal temperature. Death.

Mr. K., æt. 72. Seen February 27th, 1891, with Mr. Woodhouse. Previously always very healthy and very temperate. Had been suffering for two weeks from Influenza, with cough, wheezing, and mucous râles in the chest. He had been gradually getting feebler, and was now greatly oppressed in his breathing, with an almost venous colour in his face. The expectoration was scanty, thick, and purulent in appearance. The pulse was 80, and the temperature normal. The chest on examination showed sibilant, and diffused large mucous rales. Heart fairly normal.

Ordered compound sulphuric ether, nux vomica, and cinchona.

He died on the following day.

Case 15.—INFLUENZA. Pleurisy. Empyema. Recovery.

Miss W., æt. 38. Seen June 13th, 1891, with Mr. Cecil Muriel. At this time her mother, aged 72, was ill in the same house with Influenzal pneumonia; and her sister was also convalescing from varied but severe Influenzal symptoms. This lady had been ill eight days with Influenza and chest complication. She had suffered severe pain in the right side, and had now the usual signs

of pleurisy with some effusion, at the right base. Temperature 100·6°. Pulse 108. Had been treated with salicylates. On June 26th, the right side of the chest being full of fluid, it was tapped and twenty-five ounces of thickish pus were removed. On July 2nd, some more purulent fluid was withdrawn, and a drainage tube inserted. She gradually recovered; as did also her mother and sister.

Case 16.—INFLUENZA. Pneumonia. Fatal asthmatic complication. Death.

Miss H., æt. 15. Seen June 17th, 1891, with Dr. Odhams. A brother in the same house was just convalescing from Influenzal pleuro-pneumonia.

Seized five days before visit after exposure two days previously, with congestive pneumonia of both bases, chiefly the left. She was subject to recurring attacks of asthma, and the lungs had become generally wheezy, sibilant, and choked, in addition to the diffused crepitus and other pneumonic signs at the bases. Her heart soon shew signs of embarrassment, and she died a few hours after my visit, presumably from cardiac thrombosis.

This patient had formerly suffered from eczema, as well as asthma, but she was free from both these ailments at the time of seizure.

Case 17.—INFLUENZA (?). Erythematous rash. Pulmonary pneumonic congestion. Tertiary suppuration in pleura. Recovery.

Master A., æt. 4, seen May 26th, 1891, with Mr. Day. This child had been ill about three weeks. At first (after exposure) he was flushed and feverish, and a rash appeared upon the skin, erythematous, or doubtfully scarlatinoid. Then congestion of the base of the right lung showed itself, which gradually passed away. He now became feverish; unnaturally quiet and composed; skin moist and perspiring; tongue clean and moist. The skin, especially over the hips and on the chest, had still present upon it an erythematous-looking rash. The urine had a floating phosphatic pellicle, and effervesced with acetic acid. It was free from albumen.

After a few days, and rather suddenly, effusion into the pleura was found to have occurred. This was in due time aspirated, and twenty ounces of purulent fluid were withdrawn. The chest re-filled, and on the fluid being again removed, a sinus continued open. The opening was now freely enlarged, and the child gradually recovered, and regained perfect health.

NOTE.—Influenza was fully prevalent; the rash made its specific character almost certain.

Case 18.—INFLUENZA. Pains of abdomen and left side; increase of periodic headaches; general nervous symptoms.

Mr. A., aged 28, married. Seen January 25th, 1890. Several others in the house ill with Influenza. When seized three weeks ago, he was chilly, then feverish; and had pains of the head, back of the neck, loins, and across the upper part of the abdomen. Had also much pain on

the left side of the chest, "over his heart." He had at first a short dry cough, and a slight "cold." Says most of these severe symptoms are now better or gone, but he still feels weak, giddy, and liable to headache. He also feels nervous, and is depressed in spirits. His bowels are habitually irritable, but they are now much more so than usual. He says he occasionally suffers (habitually) from migraine.

Examined, the heart and lungs are found to be normal; and the urine is free from both albumen and sugar. Temperature normal.

He was treated at first with doses of antipyrin, and of bromide of potassium; with a tonic mixture of cinchona and hydrochloric acid. But as he mended only slowly, and continued to complain much of headaches, and of other lingering discomforts, I prescribed for him pills of Indian hemp and Dover's powder; with the local use of an anodyne liniment (opium, belladonna, and chloroform) occasionally. He gradually quite recovered.

Case 19.—INFLUENZA. Late simple debility. Threatened phthisis.

A. S., æt. 22, male. Seen July 7th, 1890, with Mr. Vincent. Had Influenza in February. Got better from this; but for the last few weeks had been feeling weak and ill, with shortness of breath and some palpitation of the heart. His cough had now quite disappeared, but he had recently seen some streaks of blood in the scanty expectoration. He occasionally suffered from pains across the

lower part of the chest. The heart was normal; the lungs were free from rales; but there was somewhat blowing and relaxed respiration at the left apex. No percussion dullness. Other organs healthy. He was recommended citrate of iron and quinine, with nux vomica; a glass of port wine daily; and to try a change from home.

Case 20.—INFLUENZA. General sibilant rales. Severe local pain. Sweating and prostration. Ultimate phthisis.

Miss —, aged 20. Seen January 22nd, 1890, with Dr. Coomber. Ill twelve days with Influenza, with which several other members of the household are suffering. During these days she has felt very ill and prostrate; the heart's action has been very feeble; and there has been much faint perspiration. Temperature yesterday was 104°, but this morning it has suddenly fallen to normal. The sharp pain of the side below the left breast, which was so severe yesterday as to require doses of opium, is also better to-day. There is in this spot a very little fine crepitation audible (without friction); but in nearly all other parts of both the lungs there are only varying sounds of sibilus, and sibilant ronchus, and bronchial wheezing. The cough is frequent, but almost dry. She is occasionally sick, without apparent gastric disturbance; and at times is much flushed.

This lady soon improved, but after a time she became, I was informed, phthisical, and died. A sister was at the time ill in the house with chronic phthisis.

Case 21.—INFLUENZA. Continuing pains and prostration. Early nervous sequelæ. Recovery.

E., æt. 65. Seen May 14th, 1891, with Dr. Ellis. Has been ill between two and three weeks. Suffered at first from chills, followed by a rise of temperature to 104°, and pains of the head, eyes, shoulders, and thighs. Had a little cough, now better. The temperature has now fallen to 97°, but he still feels weak and prostrate and nervous. He also often still feels pains in the back of the head, and the shoulders, as well as in the thighs and calves of the legs. Often also has disagreeable feelings of "pins and needles" in the upper arms; and a woolly or wooden feeling in the fingers. There is no loss of motor power anywhere. The heart, examined, is normal; and the urine free from albumen. Habits, very abstemious.

He was recommended to take a pint bottle of champagne daily, with a tonic mixture of dilute phosphoric acid, quina, and nux vomica; and to use an anodyne liniment to the aching parts, if the pains continued.

He soon recovered.

Case 22.—INFLUENZA. Prolonged nervous debility. Headache. Hyperæsthesia. Recovery.

Mr. A., æt. 40, married. Seen May 13th, 1890, with Dr. Darrell. This patient was a nervous and weakly man, always dreading that he was becoming phthisical; until recently an abstainer. He had recently been to Lowestoft for change, without much benefit.

He had been ill fifteen weeks, in fact since his first

seizure with Influenza, and had practically never recovered from it. He complained of general debility, with depression of spirits, and a sense of great nervous weakness. He had recurring pains of the front part of his head, and also of the anterior part of the thighs. And he complained of frequent sensations of "pins and needles" in the upper arms or in the thighs.

The lungs, examined, were found to be quite free from disease. A chloasmal eruption existed on the front of the chest.

No internal organs appeared to be diseased.

He was ordered a mixture of ammoniated valerian, with bromide of potassium, and citrate of iron and strychnia; with an anodyne liniment for external use; and he gradually improved in health.

Case 23.—INFLUENZA. Late and obscure neurasthenic symptoms. Albuminuria. Slow recovery.

A. N., æt. 21. Seen June 9th, 1890, with Mr. Wayman. In common with all the rest of his family, he had Influenza in January and February. He got gradually better, but never quite well, and remained in this condition until about three weeks ago, since which time he had been feeling extremely weak; with great loss of appetite, pains in the right loin, and below the left nipple. The quantity of urine was slightly increased (although the bladder was not irritable), and it was found to contain a trace of albumen, both with heat and nitric acid, and with picric acid. No sugar and no blood. A little uric acid deposited after repose.

The pulse was quiet; the temperature 97·5°. There were no signs of any sensory or motor paralysis. The knee reflexes were weak. There was now no cough or expectoration. The chest signs were normal, except for a slight feebleness of respiration, and slight increase of vocal fremitus at the right apex. The heart was beating weak and excitedly, showing cardiac muscular asthenia, but there were no other signs of organic disease.

He was a nervous man; an abstainer; and he dreaded lest his present symptoms of weakness should be due to masturbation; but he had discontinued this habit for many years, and never practised it much.

He was recommended much quietude and rest, either in bed or on the sofa; with a mixture containing compound tincture of valerian, bromide of potassium, and tincture of nux vomica, with or without a pill of phosphate of iron and phosphate of zinc.

He slowly improved.

Case 24.—Extreme tertiary nervous derangement after Influenza.

A. B., male, aged 47. May 22nd, 1890. A patient of Dr. Wrigley. In January last had a severe attack of Influenza, ushered in by chills and shivering, and soon followed by pains referred to the chest, back of the neck, shoulders, and loins, and also to various muscles. He kept his bed for some days, and then got up; but he has never recovered, and has continued weakly, nervous, and incapable of exertion. In the last two or three weeks, a remarkable train of nervous symptoms has appeared, in

addition to the trunk pains which have never left him. Thus he has had a sensation of heaviness in his forearms and hands, with special pain over the point of both olecranons. The calves of the legs have frequently ached, and the feet occasionally. At times he has had sensations of "pins and needles" in various parts. On deep inspiration, his front teeth have at times felt icy cold; and once or twice the tip of his nose has felt similarly cold. He has constantly felt sleepy. He has observed that all his pains and discomforts are increased by cold, and are relieved by lying in bed and by warmth.

On careful examination, the skin over the lower part of the chest is tender and sensitive, especially on the right side. The hands are strong and grasp well. He also walks well. The reflexes of the knee are very weak. Common sensation to touch is normal. The heart and lungs are normal. The temperature is 98° Fahr.

The urine examined, is of specific gravity, 1017, free from albumen, sugar, and excess of phosphates. The microscope shows nothing abnormal in the sediment. It was tested for urea, and found to contain ten grains per ounce.

This patient gradually recovered.

Case 25.—INFLUENZA. Secondary pains. Loss of memory. General nerve debility.

Miss W., æt. 34. Patient of Mr. Alexander. Seen November 19th, 1891. Was taken ill with Influenza in July last, the initial symptoms being vomiting and

diarrhœa, with a little cough. After eight weeks had improved, but had never got well, remaining weakly, and with a weak digestion, suffering pain after food in the mid-chest and thence through to the region of the second and third dorsal spines. Had been from home for change, but without much benefit.

In the last few weeks had suffered more, and had become more weak and more nervous. Had frequent pains over the whole occiput; and also of the upper dorsal spine, always made worse by taking food. She stated that she had lately lost memory considerably, forgetting words and the names of things and of places, and being also unable to add up figures; also that she felt weak on her legs, and inclined to stagger in walking. She had also been much depressed, and often inclined to cry. There had also been for the last week, sensations of numbness and coldness in the left arm and leg, and her power of grasping on this side had become slightly diminished.

The special senses of sight, hearing, taste, and smell had not been affected.

She had for many years had an enlargement of the thyroid gland, but the goitrous swelling had somewhat increased in size of late.

The urine had been very variable in quantity, but otherwise normal.

She was ordered to take a mixture of ammonia, bromide, and citrate of iron and quinine, with a little nux vomica; to paint the bronchocele with iodine; and to use an anodyne liniment for her varying pains.

Case 26.—INFLUENZA. Double pneumonia. Great and prolonged nerve disturbance.

Mrs. S., æt. 60. Seen November 21st, 1891, with Mr. Cufaude. Was first taken ill on August 29th, with a rigor, bronchial râles, pneumonia of the base of the left lung, and various Influenza symptoms. (Influenza was then prevailing in her village.) She gradually improved from this, but on September 11th, the base of the right lung became affected with pneumonia. From this also she gradually recovered, but has never got well, remaining weak, languid, and nervous.

Some three or four weeks ago she again became more ill, and was often compelled to rest in bed. She suffered from pain or "heats" of the head and down along the spine, and in the upper chest. She had varied pains in the abdomen, with occasional painful burning sensations at the epigastrium, induced or much increased by eating solid food. The act of defæcation often also caused much abdominal pain. Quite lately she had complained of a sense of weakness in the left arm, with occasional anæsthetic feelings in the part. (Thirty years ago she had a slight hemiplegic attack affecting the left arm and side.)

Two days ago sat up (she thought) too long, her feet became very cold, and ever since she had felt more ill and feeble, with a great sensation of "internal heat;" and she had been obliged to keep her bed. The temperature had latterly been quite normal, or below this.

At my visit she was flushed, anxious looking, with a pulse of 84, and a temperature of 100°. She complained urgently of a hot feeling in the head, and of the scalp at

the vertex; also of sensations of internal heat; and of hot pains along the spine, the top of the sternum, and over the lower ribs; with hyperæsthesic tenderness over the whole abdomen. The spinal column was tender on percussion; the abdomen, although tender, was soft and supple. The legs, she said, ached at times, and at night would sometimes jerk so as to prevent her sleeping. She had still some cough at times in long fits, and would then bring up some portions of glairy mucus, apparently with relief.

She was restless at night, and often had considerable perspiration in the morning.

The reflexes, examined, both of the knee and plantar, were found to be diminished. There was no clonus.

Urine was free from albumen, very variable as to quantity. Bowel function fairly regular.

Although she had been nervous, depressed—occasionally crying, and very anxious about herself, there had been no delirium or mental wandering. She was not much wasted, in spite of her inability to take solid food.

The treatment agreed upon was spirit of ammonia, with bromide of potassium, and citrate of iron and quinine; and anodyne liniment, to be used freely, and sulphonal or Dover's powder at night, if required. For later trial Mr. Cufaude suggested arsenic.

Case 27.—INFLUENZA. Profuse and prolonged bronchorhœa. Recovery.

Mr. D., æt. 60. First seen January 24th, 1891. Of nervine temperament, but quite well previously. Was

seized suddenly with general symptoms of Influenza, chilliness, and cough. Two days later was found to have high temperature, sibilant and rhonchal râles in the chest, and to be expectorating most profusely,—the quantity of sputum being not less than six to eight ounces a day. The mucus was at first quite viscid and tenacious. There was no bloody discoloration. The lungs showed no signs of pneumonic congestion or inflammation.

This patient continued to expectorate about the same quantity of mucus for eight to ten days, but it gradually became more opaque. At the end of this time it began also gradually to diminish in amount, and then after another week or two quite ceased altogether and the patient recovered.

Soon after his seizure the sister who resided in the same house also fell ill with Influenza, but her attack was a mild one, and soon passed away, without special symptoms.

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